

Question			Answer	Marks	Part Marks and Guidance	
1	(a)	(i)	25	1		
		(ii)	-2000	1		
		(iii)	-0.5 oe or $-\frac{1}{2}$	1	0 for $\frac{1}{-2}$	
	(b)	(i)	0.75	4	<p>oe, nfw; isw wrong conversion after $\frac{3}{4}$</p> <p>M1 for $6x - 2 [= 10x - 5]$ oe</p> <p>and M2 for $3 = 4x$ oe or FT or M1FT for collecting xs <u>or</u> numbers correctly FT on opposite sides of equation</p> <p>and M1FT for <i>their</i> final answer FT <i>their</i> $ax = b$, dep on at least M1 already earned, for $a \neq 0$ or 1 and $b \neq 0$ (isw wrong conversion)</p>	<p>for dealing with brackets correctly, or division by 2: [$3x - 1 =$] $5x - 2.5$ oe</p> <p>award a max. of M3 if answer is not correct</p>
	(ii)	8 or -8 (both required)	3	<p>B2 for one solution or for $x = \pm\sqrt{64}$ or M1 for $x^2 = 64$ or for $(x - 8)(x + 8) [= 0]$</p> <p>or SC1 for $8^2 = 64$ or $8^2 - 4 = 60$ and SC1 for $(-8)^2 = 64$ or $(-8)^2 - 4 = 60$</p>		

2		Correctly evaluates 3.5 to 3.56 and 3.57 to 3.6	3	<i>Ignore incorrect trials</i> B1 for correctly evaluating one value from 3 to 4 inclusive And B1 for correctly evaluating one more value between 3 and 4 exclusive	<i>Their values rot to at least 1 dp</i>																																												
		Answer 3.6 with justification	1 dep	Final mark dependent on 3 scored Calculating 3.6 gives closer to 30 than 3.5 Or evaluating a value between 3.55 and 3.59 inclusive	<table style="border: none;"> <tr><td>3</td><td>14</td><td></td><td></td></tr> <tr><td>3.1</td><td>16.391</td><td></td><td></td></tr> <tr><td>3.2</td><td>18.968</td><td></td><td></td></tr> <tr><td>3.3</td><td>21.737</td><td></td><td></td></tr> <tr><td>3.4</td><td>24.704</td><td></td><td></td></tr> <tr><td>3.5</td><td>27.875</td><td>3.55</td><td>29.539</td></tr> <tr><td>3.6</td><td>31.256</td><td>3.56</td><td>29.878</td></tr> <tr><td>3.7</td><td>34.853</td><td>3.57</td><td>30.219</td></tr> <tr><td>3.8</td><td>38.672</td><td>3.58</td><td>30.563</td></tr> <tr><td>3.9</td><td>42.719</td><td>3.59</td><td>30.908</td></tr> <tr><td>4</td><td>47</td><td></td><td></td></tr> </table>	3	14			3.1	16.391			3.2	18.968			3.3	21.737			3.4	24.704			3.5	27.875	3.55	29.539	3.6	31.256	3.56	29.878	3.7	34.853	3.57	30.219	3.8	38.672	3.58	30.563	3.9	42.719	3.59	30.908	4	47		
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3	(a)	Shouldn't multiply 7 by 2 oe Should be $14 + 2$ oe Should be $12 \div 6$ oe	1 1 1	Multiplied 7 by 2 (which is wrong) He did $14 - 2$ (which is wrong) He did $6 \div 12$ (which is wrong)	Any order. Any correct statement, no contradiction.
	(b)	Sub. $\frac{1}{2}$ in correct LHS of equation and get 1	1		

5	(a)		$[11a + 5c =] 6d + 2cd$ $5c - 2cd = 6d - 11a$ $c(5 - 2d) = 6d - 11a$ $[c =] \frac{6d - 11a}{5 - 2d}$ oe	M1 Expanding brackets M1 Collecting c terms on one side, remaining terms on other, dep on having a cd term M1 Factorising c terms (may be implied by correct division); dep on having an nc term and a cd term M1 Final division by factor allow B4 for $[c =] \frac{6d - 11a}{5 - 2d}$ oe	condone $d/6$ etc Each M1 is for a correct constructive step, FT previous error if of equivalent difficulty for M4, answer must be fully correct		
		(b)	(i)	8	1	mark final answer	
			(ii)	$5x - 7$	2	mark final answer M1 for $5(x + 1) - 12$ soi	

6			$a = 15/2$ oe $f(4) = 24$	2	M1 for $9 = 2a - 6$ oe	
				1	Or FT $4 \times$ <i>their</i> $a - 6$, only if M1 has been earned	

7	(a)		$2(3x + 4)$ final answer	1	Condone missing final bracket	
	(b)	(i)	16	1		
		(ii)	7	1		
	(c)		$(x - 3)(x + 3)$ final answer	1	Condone missing final bracket	

8	(a)		<p>Correct expansion of brackets to $6x - 3$ [= 6]</p> <p>$6x = 9$ or $6x - 9 = 0$ or FT</p> <p>$x = \frac{9}{6}$ or $\frac{3}{2}$ or 1.5 oe or FT</p>	<p>M1</p> <p>M1</p> <p>M1</p>	<p>Need not be in equation, but if in eqn, rhs must be correct; or M1 for correct division to $2x - 1 = 2$</p> <p>For correct collection of terms, FT</p> <p>isw for wrong conversion or embedded answer after acceptable answer seen FT <i>their</i> $ax = b$ or <i>their</i> $ax + b = 0$ for $a \neq 1$ or 0, $b \neq 0$</p> <p>Allow B3 for $\frac{9}{6}$ or $\frac{3}{2}$ or 1.5 oe as answer nfw</p> <p>Or SC2 for embedded answer eg $6 \times 1.5 - 3 = 6$</p>	<p>If their error leads to possible rounding, FT only for answer correctly rounded to 1 dp or rot to 2 dp or more</p> <p>Flow diagram: Allow M2 for complete, correct, reversed flow diagram from start Or M1 for $6x - 3 = 6$ and M1 for complete, correct, reversed flow diagram from that stage</p>
	(b)	(i)	25.28	1	Allow $\frac{632}{25}$ oe	
		(ii)	53	1		